2020-03-09

Connecting Libraries and Learning Analytics for Student Success (CLLASS)

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9 March 2020
ER&L 2020 | @varnum | #erl20

INSTITUTE of Museum and Library SERVICES

Introduction

Senior Program Manager at University of Michigan Library

At the locus of data creation & data access:

Discovery, Delivery, **Library Analytics**

Living in two camps

- Possibilities of contribution to campus learning analytics
- Concerns about use of library data

IMLS National Planning Grant

Principal Investigator: Megan Oakleaf, Syracuse University

Grant Team

- University of Minnesota: Shane Nackerud & Jan Franzen
- University of Michigan: Maurice York, Sebastien Korner, Ken Varnum, Noah Botimer
- OCLC: Don Hamparian
- Lewis & Clark Community College: Dennis Krieb
- Unizin: Etienne Pelaprat
- IMS Global Learning Consortium: Rob Abel, Anthony Whyte

Project Goals

- The first meeting will focus on inceptive planning efforts of three tasks including feasibility studies, finalization of necessary partnerships, and beginning work plan drafts using a modified lean canvas approach.
- The second meeting will center on developing and finishing the specifications and finalizing prototype plans.
- Findings and conclusions from the meetings will be disseminated informally at the close of each meeting, in a formal white paper, and via follow-up conference presentations.

Desired Outcomes of Grant

- **cement sustaining partnerships and collaborations** among academic librarians and learning analytics linchpins, including institutional information technology and library systems professionals as well as library and higher education technology vendor communities
- **design three library prototypes that serve as proofs of concepts and models for future projects** connecting library data with institutional learning analytics
- as a part of prototype planning, **develop library data profiles for the Caliper standard**, enabling the integration of library data with institutional data repositories
- **recommend ways in which drafted prototypes can enable the use of library data to expand library support for student learning** and success in ways that are achievable, scalable, actionable, and ethical

Phases

MEETING 1
plan, conduct feasibility studies, finalize necessary partnerships, draft initial work plans

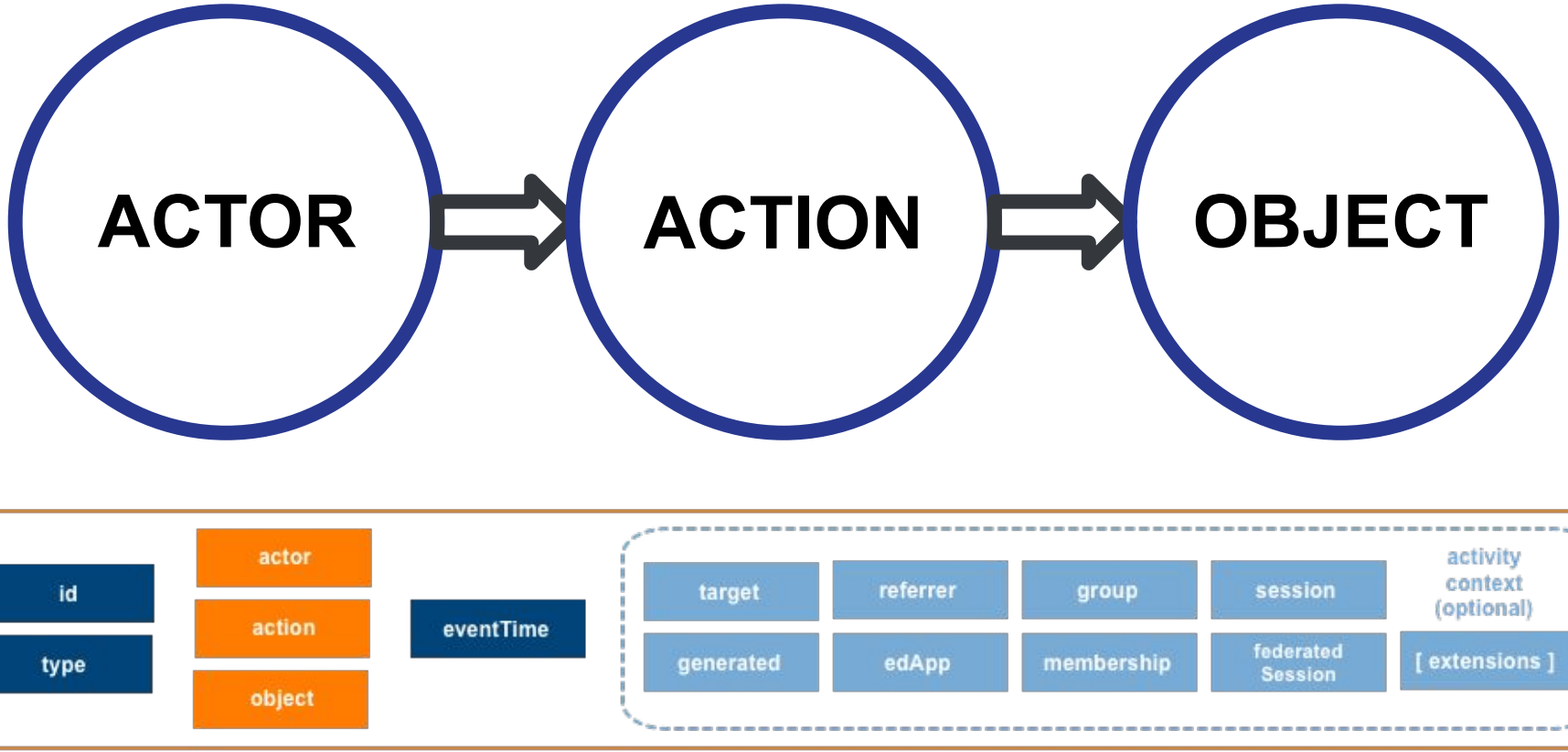
MEETING 2
develop and finish the specifications, finalize prototype plans

disseminate findings and conclusions in a formal white paper and conference presentations

What is Caliper, Anyway?

Caliper Analytics enables institutions to **collect learning data** from digital resources to better understand and visualize **learning activity and product usage data,** and present this information to students, instructors, and advisors in meaningful ways to help inform:

- Student recruitment and retention plans
- Program, curriculum, and course design
- Student intervention measures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activity context (optional)
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membership
federated Session
[extensions]

But Really, What Is It?

Definitions of data that can be represented as RDA Triples to describe student interactions with learning resources

Everything is expressed, basically, as **subject-verb-object**, in a RDA Triple

Examples:

- student enrolls in course
- student downloads article
- student completes evaluation

Nouns, verbs, and objects are all controlled vocabularies

Anything can be “decorated” with additional details

Example Caliper Packet -- Course Offering


```
{
  "@context": "http://purl.imsglobal.org/ctx/caliper/v1p1",
  "id": "https://example.edu/terms/201801/courses/7",
  "type": "CourseOffering",
  "courseNumber": "CPS 435",
  "academicSession": "Fall 2018",
  "name": "CPS 435 Learning Analytics",
  "dateCreated": "2018-08-01T06:00:00.000Z",
  "dateModified": "2018-09-02T11:30:00.000Z"
}
```

Using Caliper

For the CLLASS grant, our target was the Unizin Data Platform

Our project aimed to extend this to interaction with library resources...

So that we can understand correlations between library & student interactions...

And plan to better serve students in their pursuit of their studies.

What Gets Stored

Caliperized data can be very simple, providing an overview

> Student accessed journal article

Or it can be more specific

> Student with ID ###### accessed journal article with DOI 10.XXX/XXXXX

Privacy

Libraries can determine just what they share to a warehouse

Library Profile as drafted through CLLASS **does not require PII**

Library Profile standardizes the form of the data, and sets **minimum requirements**

Access to the data is determined by the rules of the warehouse it’s stored in

Roles (in general)

A contributing library decides what to add to the data warehouse

The data warehouse (often, a campus) determines rules for access to the data

Importantly, **the library is now part of the conversation about privacy**

MEETING 1
March 2019

Meeting 1 Goals

1. Identify kinds of library data to model
2. Develop attributes that could be “Caliperized”
3. Begin specifying a Caliper profile

Meeting 1: Data We Would Model

Focused on three kinds of transactions

- Reference desk (Lewis & Clark Community College)
- EZProxy (Minnesota & OCLC)
- Circulation (Michigan)

Meeting 1: Defining Kinds of Inputs

Identified kinds of data we wanted to record

- Reference desk transactions
- Access to online resources via proxy server
- Participation in library instruction

Different interests from each institution

Each Caliper stream needs automation

- Potential for privacy filtering on input
- Long-term goal is to have shareable code

Meeting 1: Drafting a Caliper Profile

Explored the basic Caliper specification

Started outlining minimum data elements for each of the three kinds of transactions

Made commitments to continue work over next four months

MEETING 2
August 2019

Meeting 2 Goals

1. Finalize library data to model
2. Establish common nouns, verbs, and objects
3. Continue drafting Caliper Library Profile

Meeting 2: Library Data Model

“Resource Use” event

- Actions are Access, Borrow, and Return
- Object
  - Physical Resource
  - Digital Resource

Physical Resource object could include

- Title
- ISBN
- OCLC number
- Call number (LC, Dewey, etc.)
- SuDoc
- Local system number
- Barcode
- Etc.

Digital Resource object could include

- ISSN
- ISBN
- PubMed ID
- DOI
- Etc.

Meeting 2: Library Data Model

“Participation” event

- Action is “Attend”
- Object is “Activity”
  - Reference
    - Consultation
    - Desk
      - Physical
      - Virtual
  - Instruction
    - Workshop
    - Course integrated

- Exhibit
- Event
  - Talks
  - Presentations
  - Forums
  - Outreach

Meeting 2: Caliper Library Profile

Sent sample (“lorem ipsem”) packets to Unizen Data Platform as proof of concept

Began outlining formal profile XML, with work continuing

CLLASS Work to be Done

Finalizing the draft Caliper profile

Writing a final report

Planning for an implementation grant proposal

More Information

- Connecting Libraries and Learning Analytics for Student Success
- IMS Caliper Specification

Questions?

Ask me by Twitter or Email

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